

## 0.a. Goal

Goal 3: Ensure healthy lives and promote well-being for all at all ages

## 0.b. Target

Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

## 0.c. Indicator

Indicator 3.9.3: Mortality rate attributed to unintentional poisoning

## 0.e. Metadata update

May 2021

## 0.f. Related indicators

Indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology

## 0.g. International organisations(s) responsible for global monitoring

World Health Organization (WHO)

## 1.a. Organisation

World Health Organization (WHO)

## 2.a. Definition and concepts

### Definition:

The mortality rate attributed to unintentional poisoning as defined as the number of deaths of unintentional poisonings in a year, divided by the population, and multiplied by 100 000.

### Concepts:

Mortality rate in the country from unintentional poisonings per year. The ICD-10 codes corresponding to the indicator includes X40, X43, X46-X48, X49.

## **2.b. Unit of measure**

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Rate per 100 000 population

## **2.c. Classifications**

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Poisonings are defined in terms of the International Classification of Diseases, Tenth Revision (ICD-10) (See 2.a)

## **3.a. Data sources**

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Data inputs to the estimate include (a) data on WASH services and practices, and (b) cause-of-death data, of which the preferred data source is death registration systems with complete coverage and medical certification of cause of death. Other possible data sources include household surveys with verbal autopsy, sample or sentinel registration systems, special studies and surveillance systems.

## **3.b. Data collection method**

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WHO collects data directly from country sources, and following established method, estimates are shared with countries to receive their feedback before publication. See Indicator 6.1 above for more details.

## **3.c. Data collection calendar**

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WHO sends an e-mail two times per year annually requesting tabulated death registration data (including all causes of death) from Member States. Countries may submit annual cause-of-death statistics to WHO on an ongoing basis.

## **3.d. Data release calendar**

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End of 2020

## **3.e. Data providers**

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National statistics offices, various line ministries and databases covering civil registration with complete coverage and medical certification of cause of death.

## **3.f. Data compilers**

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WHO

### 3.g. Institutional mandate

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According to Article 64 of its constitution, WHO is mandated to request each Member State to provide statistics on mortality. Furthermore, the WHO Nomenclature Regulations of 1967 affirms the importance of compiling and publishing statistics of mortality and morbidity in comparable form. Member States started to report mortality data to WHO since the early fifties and this reporting activity is continuing until today.

### 4.a. Rationale

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Measuring how the mortality rate from unintentional poisonings provides an indication of the extent of inadequate management of hazardous chemicals and pollution, and of the effectiveness of a country's health system.

### 4.b. Comment and limitations

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Data on deaths are widely available from countries from death registration data or sample registration systems, which are feasible systems, but good quality data are not yet available in all countries. Such data are crucial for improving health and reducing preventable deaths in countries. For countries that do not have such registration systems, data need to be completed with other types of information.

### 4.c. Method of computation

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The methods with agreed international standards have been developed, reviewed and published in various documents.

For countries with a high-quality vital registration system including information on cause of death, the vital registration that member states submit to the WHO Mortality Database were used, with adjustments where necessary, e.g. for under-reporting of deaths, unknown age and sex, and ill-defined causes of deaths.

For countries without high-quality death registration data, cause of death estimates are calculated using other data, including household surveys with verbal autopsy, sample or sentinel registration systems, special studies

Complete methodology may be found here: [https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019\\_cod\\_methods.pdf](https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019_cod_methods.pdf)

### 4.d. Validation

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The number of deaths were country consulted with country designated focal points (usually at the Ministry of Health or National Statistics Office) as part of the full set of causes of death prior to the release.

### 4.e. Adjustments

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Deaths of unknown sex were redistributed pro-rata within cause-age groups of known sexes, and then deaths of unknown age were redistributed pro-rata within cause-sex groups of known ages.

## 4.f. Treatment of missing values (i) at country level and (ii) at regional level

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- At country level

For countries with high-quality cause-of-death statistics, interpolation/extrapolation was done for missing country-years; for countries with only low-quality or no data on causes of death, modelling was used. Complete methodology may be found here:

WHO methods and data sources for global causes of death, 2000–2019  
([https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019\\_cod\\_methods.pdf](https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019_cod_methods.pdf))

- At regional and global levels

NA

## 4.g. Regional aggregations

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Country estimates of number of deaths by cause are summed to obtain regional and global aggregates

## 4.h. Methods and guidance available to countries for the compilation of the data at the national level

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The cause of death categories (including unintentional poisoning follow the definitions in terms of the International Classification of Diseases, Tenth Revision (ICD-10). Please see Annex Table A of the WHO methods and data sources for global causes of death, 2000–2019  
([https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019\\_cod\\_methods.pdf](https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019_cod_methods.pdf))

## 4.i. Quality management

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The World Health Organization (WHO) established a Reference Group on Health Statistics in 2013 to provide advice on population health statistics to WHO with a focus on methodological and data issues related to the measurement of mortality and cause-of-death patterns. The group facilitated interaction between multilateral development institutions and other independent academic groups with WHO expert groups in specific subject areas including methods to the estimation on causes of death

## 4.j. Quality assurance

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The data principles of the World Health Organization (WHO) provide a foundation for continually reaffirming trust in WHO's information and evidence on public health. The five principles are designed to provide a framework for data governance for WHO. The principles are intended primarily

for use by WHO staff across all parts of the Organization in order to help define the values and standards that govern how data that flows into, across and out of WHO is collected, processed, shared and used. These principles are made publicly available so that they may be used and referred to by Member States and non-state actors collaborating with WHO.

## 4.k. Quality assessment

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All statements and claims made officially by WHO headquarters about population-level (country, regional, global) estimates of health status (e.g. mortality, incidence, prevalence, burden of disease), are cleared by the Department of Data and Analytics (DNA) through the executive clearance process. This includes the GATHER statement. GATHER promotes best practices in reporting health estimates using a checklist of 18 items that should be reported every time new global health estimates are published, including descriptions of input data and estimation methods. Developed by a working group convened by the World Health Organization, the guidelines aim to define and promote good practice in reporting health estimates.

## 5. Data availability and disaggregation

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Data availability:

Almost 70 countries currently provide WHO with regular high-quality data on mortality by age, sex and causes of death, and another 58 countries submit data of lower quality. However, comprehensive cause-of-death estimates are calculated by WHO systematically for all of its Member States (with a certain population threshold) every 3 years.

Time series:

From 2000 to 2019

Disaggregation:

Data can be disaggregated by age group, sex and disease.

## 6. Comparability/deviation from international standards

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Sources of discrepancies:

WHO is required by World Health Assembly resolution to consult on all WHO statistics, and seek feedback from countries on data about countries and territories. Before publishing all estimates undergo country consultations.

## 7. References and Documentation

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URL:

<https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates>

References:

WHO indicator definition (<http://apps.who.int/gho/data/node.imr.SDGPOISON?lang=en>)

WHO methods and data sources for global causes of death, 2000–2019

([https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019\\_cod\\_methods.pdf](https://www.who.int/docs/default-source/gho-documents/global-health-estimates/ghe2019_cod_methods.pdf))